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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,974	09/19/2003	Lawrence Domash	111554.128 US6	8612
23483	7590	11/15/2004	EXAMINER	
WILMER CUTLER PICKERING HALE AND DORR LLP 60 STATE STREET BOSTON, MA 02109			XU, LING X	
			ART UNIT	PAPER NUMBER
			1775	
DATE MAILED: 11/15/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/666,974

Applicant(s)

DOMASH ET AL.

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33-59 is/are pending in the application.
- 4a) Of the above claim(s) 33-47 and 52-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/19/2003
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 10/22/04, 10/27/04
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of claims 48-51 in the reply filed on 10/12/2004 is acknowledged. A telephone interview with Mr. Eric Prah1 on 10/22/2004 confirmed that applicant elected Group I (instead of Group II as indicated in the Restriction Response filed on 10/12/2004) and species recited in claims 48-51.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement in response to the prior Office action dated 9/8/2004, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 33-47 and 52-59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/12/2004.

### *Information Disclosure Statement*

2. The information disclosure statement filed 9/13/2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The following documents have been placed in the application file, but the information referred to therein has not been considered:

Document A3 listed on page 1 of the IDS is not legible. Document A4 only contains abstract, which is not the entire article (including pages 1322-1324) as indicated in the IDS. In order for these documents to be considered by the examiner, applicant should resubmit document

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A3 with text in bigger font size and document A4 with the entire article including pages 1322-1324.

*Specification*

3. The disclosure is objected to because of the following informalities:

On page 1 of the specification, line 2, after "filed on June 17, 2002", it should add -- now abandoned -- to indicate the status of the parent application.

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 48-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 48, it is unclear if the Fabry-Perot cavity structure including at least one layer made of a semiconductor material recited in lines 6-8 is the same layer as recited in lines 8-10 that at least one of the spacer layer and the first and second mirrors includes a layer made of a semiconductor material. Since the Fabry-Perot cavity structure comprising the spacer layer and the first and second mirrors, it is unclear if other layer different from the spacer layer and the first and second mirrors also comprising a semiconductor. The scope of the claimed subject matter is confusing. Please clarify.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 48-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Halbout et al. (US 5,408,319).

Halbout discloses a thermally-tunable Fabry-Perot filter comprising a Fabry-perot cavity structure, wherein the structure comprising a first mirror and a second mirror and a spacer layer separating the first and the second mirrors (col. 3, lines 25-67 and col. 5, lines 8-55). The space layer comprising the semiconductor silicon, which is the same semiconductor material used in the present application, see page of the specification. Therefore, the semiconductor material disclosed by Halbout would also have the thermo-optic coefficient that is sufficiently large. In addition, Halbout also discloses that the Fabry-Perot filter is a thermally-tunable filter (col. 4, lines 6-40).

With respect to claim 50, Halbout discloses that the first mirror includes additional semiconductor layer (col. 5, lines 15-20).

With respect to claim 51, Halbout discloses that the wavelength transmitted by the cavity is selected by thermally changing the index of refraction of the silicon in the cavity. The temperature of the cavity is adjusted by passing a current in the proximity or in the cavity to provide ohmic heating (col. 4, lines 30-67). The contacts for the current to flow in a region of silicon layer (col. 4, lines 60-67) are considered to be the heater element. Accordingly, Halbout

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discloses the filter comprising the heater element that is arranged to heat the layer made of the semiconductor material (the silicon layer) to vary in a controllable way the filter characteristics of the optical filter.

Halbout discloses all the limitations of claims 48-51.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu  
Examiner  
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